

# Section 7



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AP/Wide World Photos

*Somerset County's pre-disaster economy was strong, with unemployment rates lower than the State of New Jersey average and positive projected job growth and employment trends. Seven businesses in Somerset County were destroyed, 183 received major damage, and 36 received minor damage from Hurricane Floyd. Somerset County communities studied in detail in this report were Bound Brook and Manville.*

*As a direct result of Hurricane Floyd flooding, Bound Brook Borough suffered a 2.3 percent reduction or loss in annual payroll, a 7 percent loss in annual revenue, and a 37 percent loss in real property value. This is considered a significant impact to the overall economy for the borough, and action is necessary to prevent significant long-term effects to the borough's economy. Bound Brook should work with the USACE to implement its flood protection project and prepare a long-term recovery plan.*

*The Manville Borough suffered less than a 0.1 percent reduction in annual payroll and real property value and a 4 percent reduction in annual revenue as a direct result of the flood. Although this is*

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*considered an insignificant impact to the borough's overall economy, indirect effects could be significant without government assistance. Manville should work with the State and FEMA to consider flood control measures and relocation assistance.*

### 7.1 Pre-Disaster Conditions

#### 7.1.1 Primary Industries and Employment

Somerset County, which includes Bound Brook Borough and Manville Borough, is New Jersey's 13th largest county in both area and population. The county's per capita income in 1997 was \$46,392. Average 1998 unemployment for the county was 2.6 percent, which is less than the State's 4.6 percent figure. Bound Brook and Manville both have an employment rate of 3.1 percent. Although per capita income in Somerset County was well below the State average, other indicators, such as job growth and projected employment trends, suggest the county's economy is robust.

Somerset County's primary industries (40 percent) are in the services sectors, based on the number of employed individuals (see Table 7-1). Manufacturing, retail trade, and transportation and public utilities

**Table 7-1 Primary Industries in Somerset County (1996)**

Sector	Number of Establishments	Number Employed
Agriculture, Forestry, and Fishing	216	856
Mining	5	436
Construction	892	5,594
Manufacturing	455	27,632
Transportation & Public Utilities	422	18,380
Wholesale Trade	741	12,860
Retail Trade	1,761	21,943
FIRE	828	14,874
Services	3,605	52,389
Unclassified	31	32
Total	8,956	154,996

Source: U.S. Bureau of the Census

account for 18 percent, 14 percent, and 12 percent, respectively. From 1996 to 2006, employment in the service and transportation sectors is expected to increase substantially at annual rates of 3.5 percent and 2.4 percent, respectively. Employment in manufacturing and the public sector are expected to decrease at annual rates of 0.5 and 0.2 percent, respectively.

Bound Brook Borough has a population of 9,618 (1996), making it the 11th largest among the county's townships and boroughs. The main bodies of water crossing the Bound Brook territory are the Raritan River, which divides Bound Brook from South Bound Brook, and Middle Brook, which runs from north to south Bound Brook.

Bound Brook has historically served as a stage, and later a rail, stopover between New York and Philadelphia. Today, Bound Brook is a regular stop on the New Jersey Transit Raritan Valley Line. In addition, three major highways connect Bound Brook to the surrounding region. Highway 287 crosses Bound Brook from northwest to southeast, while Highways 22 and 28 cross the borough from east to west.

In the early 1900's, Italians and Poles came to work in the woolen mills of the area. These woolen mills were later replaced by capital intensive manufacturing plants, particularly in the chemical sector. Two of the largest companies in this sector were the Calco Chemical Company, which later became the American Cyanamid Company, and the Bakelite Company, later known as the Union Carbide Corporation. Their plants are both located on the outskirts of the borough. According to the *Zip Code Business Patterns 1995*, there are 16 manufacturing establishments located within the Borough of Bound Brook. Ten of the establishments in this sector employed less than 10 workers while the remaining six employed more than 10 workers.

The service sector accounted for 125 establishments, or 36 percent of the 352 establishments reported, for Bound Brook in 1995. Only 25 service establishments employed more than 10 workers. Retail trade constituted the second largest category in terms of number of establishments, accounting for 87 businesses, or 25 percent of the total. Sixty-seven of these retail businesses employed less than 10 workers. According to the Somerset County Chamber of Commerce, the main service and retail districts in Bound Brook are located in downtown Main Street, Union Avenue, and Tea Street.

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Bound Brook Borough businesses employed 4,139 people in 1996. The U.S. Census Bureau reported that the 1996 annual payroll was \$146 million for the 364 businesses located in the borough. Annual revenue for these businesses was \$223 million for the 200 businesses evaluated (including only the services, wholesale trade, and retail trade industries). Commercial and industrial property values were determined from assessed values for a total business property market value of \$58 million. Bound Brook Borough's largest employers are listed in Table 7-2 (not including Union Carbide Corporation which is located outside the corporate limits of Bound Brook).

**Table 7-2 Major Businesses in Bound Brook Borough**

Major Employers	Industry Sector	Number Employed
Community Medical Referrals, Inc.	Services	200
R B H Dispersions, Inc.	Manufacturing	90
American Cyanamid Company, Inc.	Manufacturing	80
Integrated Health Services, Inc.	Services	75
Somerset Valley Nursing Home, Inc.	Services	68
Marisol, Inc.	Manufacturing	60
Somerset Tire Service, Inc.	Retail Trade	60
Somerset Savings Bank	FIRE	57
Able Ambulance & Medical Coach Service, Inc.	Transportation & Public Utilities	52

Source: Dun and Bradstreet, October 1999

The Manville Borough had 10,335 inhabitants in 1997. The city is rather old, densely developed, and slow-growing, having largely developed in support of a few major manufacturing firms in the 19th century (notably Johns Manville, Inc., known for home-building products). As such, property values are significantly lower than in the rest of the fast-growing, mostly suburban Somerset County. Manville is bordered by the Raritan River to the north and the Millstone River to the south. The eastern boundary of Manville is formed by the confluence of these two rivers. The western portion of Manville is also crossed by Royce Brook.

Manville's Main Street, County Road 533, is a major thoroughfare and a significant alternative to U.S. Route 206 for many travelers. Manville's retail and service establishments have come to rely upon spending by

## Somerset County/Boroughs of Bound Brook and Manville

commuters who use this road since the loss of several manufacturers in the 1970's and 1980's (e.g., National Starch, Johns Manville, and American Cyanamid), a hemorrhage that caused the loss of 25,000 jobs. Adesa Corporation, an auto auction house, remains the only relatively large employer in the city, with 500 workers, representing approximately 40 percent of the city's employment base. Thus, Adesa carries Manville's top 10 businesses, which compose 63 percent of its employment, despite amounting to only 5.6 percent of its businesses.

Manville is no longer the large manufacturing company town it was as recently as 1975. It is now home to a concentration of small retail and other consumer service businesses. According to the U.S. Bureau of the Census, in 1995 only 10 of Manville's 177 businesses reported more than 20 employees. Borough businesses employed 1,286 people in 1996. The U.S. Census Bureau reported a 1996 annual payroll of \$25 million for the 175 businesses located in the borough. Annual revenue for borough businesses in 1992 was \$58 million for the 110 businesses evaluated (including only the services, wholesale trade, and retail trade sectors). Manville Borough's largest employers are listed in Table 7-3. Commercial and industrial property values were determined from assessed values for a total business property market value in Manville of \$81 million.

**Table 7-3 Major Businesses in Manville Borough**

Major Employers	Industry Sector	Number Employed
Adesa Corporation	Wholesale Trade	500
Somerset County Educational Services Commission Corporation	Services	75
Chariann, Inc.	Retail Trade	70
Intermodal Transportation Service, Inc.	Transportation and Public Utilities	45
Cool-O-Matic, Inc.	Construction	43
Fras-Air Contracting, Inc.	Construction	40
Life Skills Resources Center	Services	30
United States Postal Service	Transportation and Public Utilities	25
Manville Rubber Products, Inc.	Manufacturing	25
Community Distributors, Inc.	Retail Trade	25

Source: Dun and Brad Street, October 1999

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### 7.1.2 Historic Flooding and Past Studies

Bound Brook Borough lies within the Raritan River Basin approximately 2 miles below the confluence of the Millstone River and the Main Branch of the Raritan River. It is bordered by the Raritan River to the south and tributaries of the Raritan River, Middle Brook to the west, and Green Brook to the east. Bound Brook's location leaves it susceptible to flooding from all three surrounding streams, which vary in response to rainfall events typical of the area. Thunderstorms, which usually occur in the summer, can cause flash flooding along streams with shorter/steeper drainage basins, such as Middle Brook or Green Brook. Cyclonic storms and tropical storms cause longer duration heavy rains and can create hazardous flood crests on larger river basins, such as the Raritan.

Manville's geographical location, surrounded by two rivers with relatively large watersheds, makes it particularly susceptible to flooding. A residential area, known as Lost Valley, is the most floodprone section of the borough due to its low-lying nature and immediate proximity to the Millstone River. Commercial areas along North Main and South Main Streets are also susceptible to larger flood events. Cyclonic storms and tropical storms cause the most problems for Manville because of the relatively large drainage areas of the Millstone and Raritan Rivers.

A number of government agencies have extensively studied Bound Brook and Manville's flooding problems. The New York District of USACE recently issued a May 1997 General Reevaluation Report outlining structural and nonstructural flood protection for 13 communities within the Green Brook sub-basin of the Raritan River, including Bound Brook. In June 1999, the State of New Jersey and the Federal Government signed a project cooperative agreement, outlining Federal and non-Federal responsibilities for project construction. Since the report was issued and the agreement signed, USACE has been preparing plans and specifications for the first construction elements of the flood control project, which will be situated in Bound Brook. The signing of the project cooperative agreement and the completion of plans and specifications will allow the initial construction element of the project to begin in spring 2000. Flood protection for the entire Bound Brook Borough is anticipated to be complete within 3 to 4 years.



Bound Brook has experienced numerous floods over the past several hundred years. Prior to Hurricane Floyd, the most recent flood occurred in 1996, but the most recent serious flooding occurred in 1971 with Hurricane Doria. The rapid succession of the 1996 and 1999 floods has significantly affected community reactions to current flood recovery efforts.

The 1996 flood took a substantial toll on Bound Brook's business community. Since real estate markets throughout Central New Jersey had tightened in the mid-1990's, the business vacancy rate in downtown Bound Brook was 3 percent when the 1996 flood hit. Most of the town's businesses survived the immediate aftermath of the 1996 flood. At the time, business owners and proprietors, in conjunction with the city, worked hard to survive through the Christmas shopping season, and generally succeeded. As a result, only three or four businesses went under immediately after the 1996 flood. However, severe business losses appeared 6 to 8 months later. Six months after the flood the business vacancy rate in downtown had increased to 22 percent.

Although structural flood control measures are not actively under consideration for Manville, the U.S. Congress recently authorized the New York District of the USACE to undertake a reconnaissance study of flooding along the Millstone River. A reconnaissance study generally characterizes the flood threat and outlines potential solutions.

## **7.2 Post-Disaster Conditions**

Somerset County losses from Hurricane Floyd included 7 destroyed businesses, 183 businesses that received major damage, and 36 businesses that received minor damage. Middlesex County's EMC estimated total business losses at approximately \$68 million and disaster-related unemployment totaled 1,885. Hillsborough and Millstone also appeared to suffer significant damage to their businesses.

As of November 1, 1999, 872 Somerset County businesses had teleregistered with FEMA. As of January 13, 2000, 166 businesses in Somerset County were approved for physical loans with SBA. The total value of these loans was \$8.5 million. The SBA approved economic injury loans for 122 businesses and a total of \$2.2 million.

### **Bound Brook Borough**

Hurricane Floyd caused catastrophic flooding in Bound Brook, setting a new record peak on September 17, 1999. Approximately 148 businesses suffered direct impacts from the flooding. A majority of businesses in the survey sample were located along Main Street, one of the most significantly affected areas in New Jersey. The reconnaissance team surveyed 35 establishments (approximately 24 percent of the affected businesses). All but 4 of these were small businesses (10 employees or less); the remainder consisted of medium-sized and large firms. Approximately 95 percent of all businesses that sustained damage were located in the 100-year floodplain; the remaining 5 percent were located outside the 500-year floodplain. BFEs in the vicinity of the majority of affected businesses, which were on or near East Main Street and were flooded by the Raritan River or Green Brook, ranged from 35 to 36 feet National Geodetic Vertical Datum (NGVD).

All of the businesses in the immediate downtown area suffered moderate to severe flood-related damages. Many businesses not planning to reopen suffered total losses of nonstructural items and inventory. A majority of firms affected by flooding were small, retail firms with less than 10 employees. The borough's 10 largest employers, listed in Section 7.1.1 were not directly affected.

### **Manville Borough**

Hurricane Floyd also set a new peak record within Manville. The flood crest at the Manville USGS gage on the Raritan River recorded a height of 27.5 feet, approximately 3.7 feet higher than the previous flood of record caused by Hurricane Doria in August 1971. The Millstone River also set a new peak record at the Blackwells Mills gage, generating a flood stage of 20.97 feet, 2.29 feet higher than the Hurricane Doria peak. In addition to Hurricanes Floyd and Doria, Manville suffered from other major floods in September 1882, February 1896, July 1897, October 1903, July 1916, July 1938, May 1968, and October 1996.

Flooding from Hurricane Floyd extended far beyond the 500-year floodplain designated on the FIRM via all three bodies of water surrounding the city. It was largely caused by the huge amount of rainfall that fell on the Raritan River watershed during a relatively brief 12- to 14-hour period. Recent suburban development throughout



Somerset County exacerbated the situation by increasing the amount of impervious surfaces. Some local residents suggested that Elizabethtown Water Company's recently installed weir on the Raritan River, downstream from Manville, contributed to the flooding. Many cited the apparent progressive severity and frequency of floods in Manville during their emotional explanations of the causes of the flooding.

The core of Manville's Main Street was largely untouched by the flood when the rivers crested; however, businesses unscathed by the rising water itself were encircled by it, leaving them inaccessible to customers for a day or more. Furthermore, when the flood waters receded, the usual inflow of customers from outside the community declined significantly for 1 week or more. Residential losses in Manville and neighboring communities, such as Bound Brook, reduced the amount of disposable income in the Manville market area. Many residents in these communities were forced to spend time and money on their own cleanup and recovery efforts before they could return to their normal lives. In addition, a lack of potable water forced many borough businesses to remain closed nearly 2 weeks after water levels subsided.

The most heavily damaged businesses were those closest to the confluence of the Millstone River and Royce Brook on both sides of South Main Street (e.g., numbered 230 or higher). Slightly more than a half dozen businesses on the west side of North Main Street (e.g., numbered 245 or higher) experienced significant damage. Firms in the Rustic Mall on the east side of North Main Street experienced little or no direct damage although the flood crested to the brim of the curb in the mall's parking lot.

Hurricane Floyd flooding damaged 123 of Manville's 177 businesses. The EMC estimated business losses at \$61 million and 1,875 unemployed people. One month after the flood, Manville public officials reduced the number of damaged businesses to 93. The difference in reporting may derive from what is considered to be "damage," since all city businesses suffered revenue losses.

Hurricane Floyd affected all 177 of Manville's businesses, directly or indirectly. This report uses the borough's estimate of 93 businesses that were directly affected. The reconnaissance team, accompanied by members of the local business association, surveyed 29 of the 93 businesses damaged (30 percent). The team targeted businesses

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located at the lowest elevations in the city, e.g., those that sustained the greatest amount of damage. Due to the severity of the flood, about 24 of the 93 businesses (or 26 percent) remained closed 4 weeks after the disaster. The survey team was able to obtain responses from most of these closed businesses, largely due to the full cooperation and assistance of the local business association. Approximately one-half of all Manville businesses that sustained damage were located in the 100-year floodplain. Close to 40 percent of the damaged businesses were located in the 500-year floodplain, while the remaining 10 percent were located outside the 500-year floodplain.

Of Manville's top 10 businesses listed in Section 7.1.1, only Cool-O-Matic, the U.S. Postal Service, and Adesa were directly affected by the flooding. Adesa and the U.S. Postal Service did not fully participate in the survey. A brief telephone interview with an Adesa official indicated that its buildings suffered no damage. Nonetheless, the business sustained significant revenue losses to its auto auction business because a large number of employees (about 60 of the 350 employed at the site) were unable to show up for work due to flooding at their homes. All the other businesses in Manville that the flood affected had fewer than 20 employees (typically 4 or less) and were in the retail and service sectors.

### 7.2.1 Revenues Lost

#### **Bound Brook Borough**

Twenty-five interviewees responded to the survey question about lost revenues, reporting total lost revenue of \$2.1 million. If the implied loss rate is applied to the other 123 businesses affected by flooding, then lost revenue would total \$13 million.

#### **Manville Borough**

All interviewees responded to the survey question about lost revenues, reporting total lost revenue of \$880,000. In order to estimate the losses to all Manville businesses, the reconnaissance team rounded up slightly and doubled the sample estimate. This was done even though the survey only covered those businesses most affected by the flood because all 177 businesses suffered revenue losses to some degree. The implied lost business revenue in Manville due to flooding would total \$1.8 million.

### **7.2.2 Annual Taxes Lost**

There may be a slight reduction in property taxes associated with reappraisals of commercial property affected by Hurricane Floyd. The amount of this reduction would be based on appraised values of specific properties and is therefore impossible to estimate at this time.

### **7.2.3 Numbers of Employees**

#### **Bound Brook Borough**

Based on the responses received from the 35 business owners interviewed, approximately 98 jobs were lost due to the flooding. Most job losses were reported in the service sector (78), but employment levels were also reduced in the wholesale and retail trade (14), manufacturing (5), and FIRE (1) sectors. Small businesses endured the majority of job losses. If the survey sample is representative of 24 percent of the approximately 148 affected businesses, an estimated 408 jobs were lost in the Bound Brook Borough. Since a majority of these firms had no plans to reopen, most of these job losses may be considered permanent, representing an estimated annual payroll loss of \$3.3 million. This estimate is based on New Jersey State 1997 first quarter wage per worker figures for the manufacturing, trade, service, and FIRE sectors.

#### **Manville Borough**

Based on the responses received from the 29 business owners interviewed, approximately 23 of the borough's 1,200 jobs were permanently lost due to flooding. The total annual payroll associated with these job losses is \$460,000. This job-loss count and payroll estimate may rise or fall as time passes since several businesses said they were not yet operating at full capacity, while others doubted they could continue unless they received financial assistance. Since the survey team covered nearly all of the most heavily damaged firms in the city, this decrease in jobs is fully representative of Manville's population of businesses 4 weeks after the flood.

Many in Manville's business community fear that a significant number of residences in Lost Valley and other sections of the borough will be demolished or never again be inhabited, implying that a significant portion of the local customer base would disappear. Furthermore, several business owners, who want to remain in Manville, questioned their ability to find "dry" space to locate their families or business.

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Thus, it is possible that the next flood may push many members of Manville's rather extensive community of small businesses to the point where declaring bankruptcy or relocating outside of the borough may be their only viable options. Moreover, the demise of one or more businesses may well force other businesses to follow suit.

### 7.2.4 Structural Property Damage

#### Bound Brook Borough

Sixteen respondents provided cost estimates to repair structural damage to their facilities. The total combined estimate for the 16 respondents was \$1.5 million. The remaining 19 respondents could not or would not provide estimates. If the 16 respondents represent an 11 percent sample, the total estimate to repair structural damages is \$14 million for all businesses affected. Since most insurance claims were still pending at the time of the survey, business owners generally could not estimate the share of their losses that insurance would cover.

#### Manville Borough

Ten of 29 respondents reported cost to repair structural damage to their facilities; the remaining respondents had no structural damage to report. The total combined estimate for the 10 respondents was \$520,000. Three survey participants said they should be covered for about \$180,000 of these losses through flood insurance, so uninsured losses would be \$340,000. Assuming the facility damage to the 10 respondents represents 85 percent of the damage to the city's business population, total cost to repair structural damages are about \$400,000 for all structural damage to Manville businesses.

### 7.2.5 Nonstructural Property and Equipment Damage

#### Bound Brook Borough

Twenty-eight respondents estimated the cost to repair nonstructural damages at \$3.8 million. Seven respondents could not or would not provide an estimate. If the 28 respondents represent a 19 percent sample, the total estimate to repair nonstructural damages is \$20 million for all businesses affected. Since most insurance claims were still pending at the time of the survey, business owners generally could not estimate the share of their losses that insurance would cover.

The potential for tenants having to pay higher rental fees because of more demand and less available space is not included in this estimate. In addition, rebuilt structures may have higher rents to help cover reconstruction cost.

### **Manville Borough**

Twenty respondents estimated the cost to repair nonstructural damages at \$410,000. Nine claimed no damages to nonstructural features. Two businesses reported they were covered for approximately \$100,000 of damage, mostly through auto insurance. If the nonstructural damage to the 20 respondents represents 80 percent of such damage to the population of Manville businesses, the total cost to repair nonstructural damages for all Manville businesses would be about \$410,000.

The potential that tenants will need to pay higher rental fees because of more demand and less available space is not included in this estimate. In addition, rebuilt structures may have higher rents to help cover reconstruction cost.

## **7.2.6 Inventory Damage**

### **Bound Brook Borough**

Twenty-one respondents estimated the value of their lost business inventory (e.g., stock) at \$4 million. Fourteen respondents would not or could not provide an estimate. If it is assumed that the 21 respondents represent a 14 percent sample, the total estimated loss associated with inventory is \$30 million. Since most insurance claims were still pending at the time of the survey, business owners generally could not estimate the share of their losses that insurance would cover.

### **Manville Borough**

Sixteen respondents estimated the combined value of their lost inventory at \$410,000. The estimate includes losses of supplies that businesses sold, prepared, or installed for customers. None of these inventory losses were covered by insurance. The remaining 13 businesses surveyed claimed no inventory losses. Assuming the inventory losses of the 16 respondents represent 75 percent of the total inventory losses of the whole Manville business community, the total dollar loss associated with inventory would be about \$550,000.

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### 7.2.7 Utility-Related Losses

#### **Bound Brook Borough**

A majority of interviewees did not indicate infrastructure problems that prevented them from reopening or operating at pre-disaster levels. Physical storm damage to businesses was so extensive that infrastructure problems were usually resolved before businesses could resume operation. Nonetheless, the following infrastructure issues were reported among the survey respondents, in order of frequency mentioned: electricity, telephone, water, sewer, debris, and roads/parking.

#### **Manville Borough**

Although flooding caused significant infrastructure problems in Manville, they were no longer an issue by the time the reconnaissance team visited the city's businesses. Phone lines of many firms were inoperable for days after the flood, an intolerable situation for recovering businesses that ordinarily take orders by fax machine or phone. As part of the Elizabethtown Water District, all of Manville was unable to use local water resources for more than 1 week.

### 7.2.8 Business Reopenings

#### **Bound Brook Borough**

The survey sample indicates that only six businesses were operating at pre-disaster levels 1 month after the flood. Seventeen businesses remained closed and 11 others were operating below pre-disaster levels. The partially operational businesses averaged 50 percent operational, with responses ranging from 25 percent to 80 percent. Of the 17 businesses still closed, 12 plan to reopen. Business owners planning to reopen indicated they would be able to reopen in 37 days, on average. The estimated time to reopen businesses ranged from 5 days to 6 months.

Additional information provided by the Economic Development Director for the Bound Brook Borough indicated that, in total, 82 businesses in Bound Brook are currently closed as the result of flooding and 18 businesses have reopened. Three businesses in Bound Brook were demolished due to flood damage and one business has relocated out of the area.



### **Manville Borough**

As mentioned earlier, 26 percent of damaged businesses remained closed 1 month after the flood. Businesses that sold foodstuffs and beverages were shuttered until they disinfected their floors and walls, obtained new equipment or repaired existing equipment, and refilled supply rooms (often in the basement, making them more susceptible to flood damage). Some businesses were closed because they were still cleaning up a month after the flood subsided. Efforts were exacerbated for many businesses owners and managers because their residences had been damaged as well. Meanwhile, seven businesses sought new flood-free locations.

Business owners who rented their commercial space and those who experienced damage at their residences tended to recover the slowest since they tended to have little collateral to offer to qualify for loans. Owners who were near or past retirement age typically refused to go into debt, while younger owners were more likely to think about retrenching, at least temporarily forgoing the entrepreneurial spirit they had enjoyed in favor of increased income security.

Only three of the surveyed closed businesses indicated they would fail to open within 1 week of the interview (5 weeks after the flood). One owner was waiting for an insurance check and did not want to go further into debt. He owned his building, and his business was on the first floor of his family residence. Nonetheless, he vowed that he would leave Manville if and when he could sell his building and rebuilt business, citing ridicule from his network of family and friends outside the city about the location of his business in a frequently flooded area.

### **7.2.9 Rebuilding or Relocation**

#### **Bound Brook Borough**

Twenty-five respondents (86 percent) indicated they would reopen their businesses in the same location. However, two businesses that plan to reopen in the same location indicated this would only be temporary since they were eventually planning to relocate outside of Bound Brook, but within the commuting area. The remaining four businesses (14 percent) are considering relocating within the Bound Brook community.

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### Manville Borough

Of the 29 business owners/managers surveyed, only 1 planned to reopen in another State. Twenty business owners/managers responded that they would reopen on the same site, although most of them questioned the future viability of the business at its present location. Eight said they would reopen within the same community but at another site. This last number seems improbably high given the small amount of commercial space in the borough not located in the floodplain.

### 7.2.10 Category and Value of Economic Loss

Table 7-4 summarizes the economic effects caused by flooding in Bound Brook and Manville. When jobs are lost as a result of a disaster to a business (as opposed to a strategic move to consolidate positions or locations), staff layoffs typically result in lost revenue. Therefore, payroll losses are embedded in estimates for lost revenue, and adding payroll losses to revenue losses would be double-counting the former. This does not trivialize the significance of the loss of these jobs to the employers or to the workers themselves. Indeed, the loss of jobs to any residents of the flooded communities would likely make the business community's full recovery that much more difficult.

**Table 7-4 Summary of Economic Losses – Bound Brook and Manville Boroughs**

Category of Economic Loss	Value of Loss (\$)	
	Bound Brook	Manville
Revenue Losses	13,000,000	1,800,000
<i>Payroll Losses</i>	<i>3,300,000</i>	<i>460,000</i>
Structural Property Damage	14,000,000	400,000
Nonstructural Property and Equipment Damage	20,000,000	410,000
Inventory Damage	30,000,000	550,000
Total (excluding Payroll Losses)*	77,000,000	3,200,000

\* Totals were rounded to two significant digits.

### **7.3 Conclusions**

Flooding after Hurricane Floyd was devastating to Bound Brook, Manville, and other smaller communities along the Raritan and Millstone Rivers. Moreover, the flood affected much of Somerset County, at least temporarily. Many businesses in the county were closed for at least 2 days, and businesses that relied on water from the Elizabethtown Water Company were unable to use this source for more than 1 week after the flooding. Furthermore, electric power and phone systems were off-line in most parts of the county from several hours to 1 or more days. Thus, losses due to the flood were widespread across Somerset County, albeit quite temporary and, for the most part, were not extreme. With the exception of localized tragedies along the Raritan and Millstone Rivers, business losses tended to be minor. Indeed, some businesses elsewhere in the county benefited from the flood, essentially serving customers who normally patronize the temporarily closed businesses along these two rivers.

Pre-flood day-to-day life had resumed 1 month after the flooding, even for a number of businesses affected in Manville and Bound Brook. Activities were nearly back to normal, particularly those in construction, business services, and essential consumer services (e.g., food stores). Businesses in these towns that relied upon the rising disposable income of local residents (e.g., those providing elastic goods and services) will have more difficulty recovering. While they may fail without some sort of external financial assistance, it is highly unlikely that their demise will affect the county's overall economy.

#### **7.3.1 Bound Brook Borough**

Few of the establishments surveyed had flood insurance. As such, most were facing substantial out-of-pocket expenses and high debts if they were able to secure credit. More significantly, many of these businesses survived the 1996 flood, which has several implications. Business owners were prepared for a flood of the magnitude of the 1996 event, which caused damage and disruption but was not catastrophic, but they were not prepared for the level of flooding Hurricane Floyd brought. Moreover, some business owners sought disaster assistance after the 1996 flood and were turned down by the SBA, encountered substantial barriers or delays, or, most distressingly, were paying off SBA loans when the 1999 flood hit. This combination of factors may explain the very strong sentiment for rapid disbursement of Federal

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grants instead of loans, evident by the “grants or ghost town” signs pasted throughout the area.

Hurricane Floyd represented a major shock to the commercial property market in Bound Brook. Decreased rental prices may increase the number of less desirable businesses downtown. Hurricane Floyd also provided an opportunity for property owners to consolidate holdings by purchasing flood-impacted properties at reduced current market rates.

In total, approximately 148 Bound Brook businesses were damaged. All of the businesses in the immediate downtown area suffered severe to moderate flood-related damages. Seventeen of the 35 businesses surveyed remained closed at the time of the interviews. Direct revenue losses were no more than 7 percent of annual revenues for Bound Brook Borough businesses. Direct payroll losses were approximately 2.3 percent of annual payroll for the businesses in the borough.\* Structural property damage was approximately 37 percent of real property values of Bound Brook businesses. These direct losses are considered a significant impact to Bound Brook’s business community.

Significant negative long-term economic impacts are expected, but could be minimized if recommendations listed in Sections 3.4 and 7.4 are adopted.

Bound Brook has recently contracted with the Urban Land Institute to prepare a comprehensive plan for economic development.

### 7.3.2 Manville Borough

Damage in Manville was obviously not limited to businesses. Public buildings and structures sustained \$170 million in damage; 2,550 single-family homes and 70 multifamily units also were damaged, and many were deemed uninhabitable. It is, therefore, this degree of severity of the flood’s effects that continues to affect Manville businesses more than 1 month after the flood. The fact that this was the second or third significant flood in three years for several of the businesses made

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\* Annual revenue was based on 1992 data. Although this figure was adjusted to 1999 dollars, it does not account for any economic growth that may have occurred in the community between the time the data was recorded and 1999. Therefore, compared to annual revenue, the actual percentage is expected to be less than reported. In addition, annual revenue was based on only three industry sectors (services, retail trade, and wholesale trade); the percentage of annual revenue lost to the disaster was therefore less than estimated.

it quite poignant. Indeed, many households located in the 100-year floodplain do not plan on returning. This potential loss of customers seriously erodes the customer base of most local establishments. As a result, almost uniformly, business owners expressed concern about the domino-like effect that such a substantial permanent loss in the customer base is likely to have on the community's future ability to retain existing business and attract new ones.

Approximately 4 weeks after the flood, 26 percent Manville's damaged businesses remained closed. Direct revenue losses were no more than 4 percent of annual revenues for Manville Borough businesses. Direct payroll losses were less than 0.1 percent of annual payroll for the businesses in the borough.\* Structural property damage was less than 0.1 percent real property values of Manville businesses. These direct losses are not considered a significant impact to Manville's business community. As was mentioned earlier, however, the enumerated revenue losses may be substantially below reported expectations in the long term if business in Manville remains sluggish and recommendations in Sections 3.4 and 7.4 are not adopted.

## 7.4 Recommendations

### 7.4.1 Bound Brook Borough

- (a) **Implement nonstructural flood mitigation.** Bound Brook Borough has a long history of flooding. An opportunity may exist to implement limited nonstructural flood damage mitigation on flood damaged buildings within Bound Brook Borough, as generally outlined in Section 3.4.2 (a). A number of buildings observed during the business interviews can possibly be protected through waterproofing, flood barriers, or elevation. In addition, a flood warning system and flood education program could substantially decrease inventory and equipment damages if a flood were to recur. However, the density of development and extent of the area suffering from flood damages may make it impractical to relocate or protect all businesses currently situated within the floodplain.

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\* Annual revenue was based on 1992 data. Although this figure was adjusted to 1999 dollars, it does not account for any economic growth that may have occurred in the community between the time the data was recorded and 1999. Therefore, compared to annual revenue, the actual percentage is expected to be less than reported. In addition, annual revenue was based on only three industry sectors (services, retail trade, and wholesale trade); the percentage of annual revenue lost to the disaster was therefore less than estimated.

- (b) **Implement flood protection project.** The New York District of the USACE and the New Jersey Department of Environmental Protection have studied Bound Brook Borough's flooding problems extensively. They issued a May 1997 General Reevaluation Report outlining structural and nonstructural flood protection for 13 communities within the Green Brook sub-basin of the Raritan River. As discussed in Section 7.1.2, the USACE and the New Jersey Department of Environmental Protection have been preparing plans and specifications for the first construction elements of the flood control project that will be situated in Bound Brook. Flood protection for the entire borough is anticipated to be completed within 3 to 4 years, and therefore may present the best opportunity for Bound Brook to receive relief from recurring flood damages. Bound Brook should continue (to work with the New York District of the USACE) to implement this project.
- (c) **Implement disaster-resistant development strategies.** As with all structural flood control projects, the threat of a flood event in Bound Brook exceeding the design level of a project still remains. In addition, a flood control project may provide protection from river flooding, but lack of capacity in local storm drainage systems can still cause localized problems. Therefore, disaster-resistant development strategies and selected means of nonstructural flood protection, as outlined in Section 3.4.2 (a), remain valid mitigation strategies.
- (d) **Prepare long-term recovery plan.** Bound Brook Borough should prepare a long-term development plan and seek technical assistance from NJOEM in preparation of this study. Pertinent long-term recovery strategies are outlined in Section 3.4.1. Many other general recommendations are also valid for long-term development planning. Bound Brook Borough has worked with the Urban Land Institute to develop a revised economic development strategy. The borough should incorporate this study into its long-term recovery plan. Moving the downtown Main Street businesses to a higher elevation has been explored in previous studies and this option should be studied as part of a long-term recovery plan.

Bound Brook Borough is also considering the development of an arts incubator. The long-term recovery plan should identify the potential for this as a viable economic development strategy. Lower business and housing cost could attract potential artists. Accessibility to New York City by New Jersey Transit's Raritan Valley Line is another advantage of the area. Individuals on the Raritan Valley Line represent a potential customer base for Bound Brook. To attract these potential customers, it may be necessary to increase



accessibility to the area by evaluating, for instance, parking facilities near the train station and current train service. The following recommendations may help attract artists (as potential residents and business owners) and potential customers to the Bound Brook community.

- The Bound Brook community should have delineated and distinguished boundaries.
- The Bound Brook community could develop cultural venues that would attract a larger number of visitors, such as a restored theater. However, such a measure may now require even more effort, given that the downtown theater needs considerable investment to reopen. The borough should actively seek investments to open the theater as part of pursuing the development of an arts incubator.
- Old buildings with elaborate decorative construction should be preserved and used. These structures would help distinguish Bound Brook from other suburban residential development.
- Vacant lots should be evaluated as possible sites for additional green areas.
- Borough officials should manage conflicting uses, keep the community affordable, and maintain green spaces
- Bound Brook should be accessible. Improvements to train service and parking facilities may be necessary to support downtown revitalization. Section 3.4.2 (c) contains more information on parking facilities.

**(e) Facilitate purchase of flood insurance.** General recommendations regarding facilitation of flood insurance purchases as described in Section 3.4.2 (b) are especially valid for Bound Brook. The severity of damage in the borough was exacerbated by widespread lack of flood insurance, especially for building contents, among small businesses. Reasons cited for lack of insurance included prohibitive cost and lack of knowledge that this type of insurance existed or was needed.

**(f) Provide financial assistance to businesses.** Many small businesses indicated that they would not apply for SBA loans because they did not think they would qualify due to a lack of collateral. Strategies outlined in Section 3.4.3 (b) would be pertinent towards providing financial assistance to these businesses.

### 7.4.2 Manville Borough

**(a) Implement nonstructural flood mitigation.** Consider existing opportunities to implement limited nonstructural flood damage mitigation measures for Manville businesses. Such measures are discussed generally in Section 3.4.2 (a). However, the extent and density of development in the Millstone River, Royce Brook, and Raritan River floodplains

most likely make it impractical to completely protect or relocate all the businesses susceptible to flood damage. The prioritization of properties to be addressed can be determined through a cooperative effort between the community, NJOEM, and FEMA.

- (b) **Consider structural flood control measures.** As described in Section 7.1.2, the U.S. Congress recently authorized the New York District of the USACE to undertake a reconnaissance study of flooding along the Millstone River. Actual implementation of any proposed structural flood control measure may be a long-term prospect for the borough, but it cannot replace immediate nonstructural mitigation steps that could be taken. If the project appears to be viable, the borough should seek funding from Federal and State agencies that fund activities such as buyouts, relocation, long-term recovery, and mitigation; or which implement other cost-effective, environmentally sound, long-term mitigation measures that substantially reduce the risk of future damage and loss of life from major disasters.
- (c) **Consider relocation assistance.** Manville, in conjunction with State and Federal agencies, should consider relocation assistance to businesses located in areas of repeated flooding. Assistance described in Section 3.4.2 (a) can include site selection and grants or loans for moving expenses and structural enhancements.
- (d) **Provide guidance on assistance programs available to businesses.** Several business owners were unaware of the possibility of obtaining reduced loan rates or other assistance from Federal and State relief agencies. Manville, the State of New Jersey, FEMA, and the local business association should ensure that information on assistance options reaches business owners who might need relief grants or loans. These recommendations are also described in Section 3.4.3 (b).
- (e) **Facilitate purchase of flood insurance.** While some business owners affected by Hurricane Floyd in Manville did have flood insurance, many policies were inadequate to cover the cost of repairs and losses. Coverage of structural damage was common while coverage on equipment, inventory, and revenue disruption was not. General recommendations regarding facilitation of flood insurance purchases as described in Section 3.4.2 (b) are especially valid for Manville.
- (f) **Prepare long-term recovery plan.** Manville should prepare a long-term development plan and seek technical assistance from FEMA in preparation of this study. Pertinent long-term recovery strategies are outlined in Section 3.4.1 (a). Many of

the other general recommendations are also valid for long-term development planning. The following specific economic development strategies should be considered in developing the long-term recovery plan:

- ▣ **Manville should work to capture transient traffic through the community.** The borough should work with New Jersey Transit to refurbish or build a train station on the West Trenton Line with adequate commuter parking near the downtown area to increase business patronage.
- ▣ **Manville should consider its Polish heritage and the prominent role of industry in the economic development of the borough.** Where possible, this heritage and history should be integrated into economic development strategies.

